WHÀT IS CLAIMED IS:

1. A method of manipulating the rate of upper gastrointestinal transit of a substance in a mammal having an intrinsic cholinergic afferent neural pathway projecting from a peptide YY-sensitive primary sensory neuron in the intestinal wall to a prevertebral celiac ganglion and having an adrenergic efferent neural pathway projecting from said ganglion to one or more enterochromaffin cells in the intestinal mucosa and/or to a serotonergic interneuron linked in a myenteric plexus and/or submucous plexus to an opioid interneuron, said opioid interneuron also being linked by an intestino-fugal opioid pathway projecting to said ganglion, with one or more neural connections to the central nervous system and back to the gut projecting from the ganglion, said method comprising:

providing a pharmaceutically acceptable composition, comprising an active agent selected from the group consisting of

(A) peptide YY or peptide YY functional analogs, and

(B) antagonists of receptors for (A); and

administering the pharmaceutically acceptable composition to the mammal,

said active agent being delivered in an amount and under conditions such that the cholinergic intestino-fugal pathway, at least one prevertebral ganglionic pathway, the adrenergic efferent neural pathway, the serotonergic interneuron and/or the opioid interneuron are activated by the action of (A), whereby the rate of upper gastrointestinal transit is slowed, or such that activation of the cholinergic intestino-fugal pathway, at least one prevertebral ganglionic pathway, the adrenergic efferent neural pathway, the serotonergic interneuron and/or the opioid interneuron is blocked by the action of (H), whereby the rate of upper gastrointestinal transit is accelerated.

2. The method of claim 1, wherein administering the pharmaceutically acceptable composition to the mammal further comprises administering the pharmaceutically acceptable

composition by a delivery route selected from the group consisting of oral, intravenous, intraperitoneal, and nasal.

3. A method of manipulating satiety in a mammalian subject having a cholinergic afferent neural pathway projecting from a peptide YY-sensitive primary sensory neuron in the intestinal wall to a prevertebral celiac ganglion and having an adrenergic efferent neural pathway projecting from said ganglion to one or more enterochromaffin cells in the intestinal mucosa and/or to a serotonergic interneuron linked in amyenteric plexus to an opioid interneuron, said opioid interneuron also being linked by an intestino-fugal opioid pathway projecting to said ganglion, with one or more neural connections to the central nervous system and back to the gut projecting from the ganglion, said method comprising:

providing a pharmaceutically acceptable composition, comprising an active agent selected from the group consisting of

(A) peptide YY or peptide YY functional analogs, and

(B) antagonists of receptors for (A); and

administering the pharmaceutically acceptable composition to the mammal,

said active agent being delivered in an amount and under conditions such that the cholinergic intestino-fugal pathway, one or more prevertebral ganglionic pathways, adrenergic efferent neural pathway, the serotonergic interneuron and/or the opioid interneuron are activated by the action of (A), whereby a state of satiety is induced, or such that activation of the cholinergic intestino-fugal pathway, prevertebral ganglionic pathways, ganglion to central nervous system pathways, central nervous system pathways, adrenergic efferent neural pathway, the serotonergic interneuron and/or the opioid interneuron is blocked by the action of (B), whereby satiety is suppressed.

4. The method of Claim 3, wherein a neuronal pathway projecting from said ganglion to the hypothalamus of the subject is activated by the action of any of (A) on the primary sensory neuron.

5. The method of Claim 3, wherein administering the pharmaceutically acceptable composition to the mammal further comprises administering the pharmaceutically acceptable composition by a delivery route selected from the group consisting of oral, intravenous, intraperitoneal, and nasal.

6. A method of inducing satiety in a mammal having an intrinsic cholinergic afferent neural pathway projecting from a peptide YY-sensitive primary sensory neuron in the intestinal wall to a prevertebral celiac ganglion and having a adrenergic efferent neural pathway projecting from said ganglion to one or more enterochromaffin cells in the intestinal mucosa and/or to a serotonergic interneuron linked in a myenteric plexus and/or submucous plexus to an opioid interneuron, said opioid interneuron also being linked by anintestino-fugal opioid pathway projecting to said ganglion, with one or more neural connections to the central nervous system and back to the gut projecting from the ganglion, said method comprising:

providing a pharmaceutically acceptable composition, comprising an active agent selected from the group consisting of peptide YY and peptide YY functional analogs; and

administering the pharmaceutically acceptable composition to the mammal,

said active agent being delivered in an amount and under conditions such that the cholinergic intestino-fugal pathway, prevertebral ganglionic pathways, ganglion to central nervous system pathways, adrenergic efferent neural pathway, the serotonergic interneuron and/or the opioid interneuron are activated by the action of the active agent, whereby a state of satiety is induced in the mammal.

7. The method of Claim 6, wherein a neuronal pathway from said ganglion to the hypothalamus of the mammal is activated by the action of the active agent on the primary sensory neuron.

8. The method of Claim 6, wherein administering the pharmaceutically acceptable composition to the mammal further comprises administering the pharmaceutically acceptable composition by a delivery route selected from the group consisting of oral, intravenous, intraperitoneal, and nasal.

9. A method of treating visceral pain or visceral hypersensitivity in a human subject having a cholinergic afferent neural pathway projecting from a peptide YY-sensitive primary sensory neuron in the intestinal wall to a prevertebral celiac ganglion and having a adrenergic efferent neural pathway projecting from said ganglion to one or more enterochromaffin cells in the intestinal mucosa and/or to a serotonergic interneuron linked in a myenteric plexus to an opioid interneuron, said opioid interneuron also being linked by an intestino-fugal opioid pathway projecting to said ganglion, with one or more neural connections to the central nervous system and back to the gut projecting from the ganglion, said method comprising:

providing a pharmaceutically acceptable composition, comprising an active agent selected from the group consisting of peptide YY and peptide YY functional analogs; and

administering the pharmaceutically acceptable composition to the mammal,

said active agent being delivered in an amount and under conditions such that activation of a cholinergic intestino-fugal pathway, one or more prevertebral ganglionic pathways, a gangalion to central nervous system pathway, the adrenergic efferent neural pathway, the serotonergic interneuron and/or the opioid interneuron is substantially reduced by the action of said active agent, whereby the sensation of esophageal, gastric, biliary, intestinal, colonic or rectal pain experienced by the human subject is reduced.

10. The method of Claim 9, wherein administering the pharmaceutically acceptable composition to the mammal further comprises administering the pharmaceutically acceptable composition by a delivery route selected from the group consisting of oral, intravenous, intraperitoneal, and nasal.

11. A method of manipulating post-prandial visceral blood flow to the gastrointestinal tract of a mammal having a cholinergic afferent neural pathway projecting from a peptide YY-sensitive primary sensory neuron in the intestinal wall to a prevertebral celiac ganglion and having an adrenergic efferent neural pathway projecting from said ganglion to one or more enterochromaffin cells in the intestinal mucosa and/or to a serotonergic interneuron linked in a myenteric plexus to an opioid interneuron, said opioid interneuron also being linked by an intestino-fugal opioid pathway projecting to said ganglion, with additional neural connections to the central nervous system and back to the gut projecting from the ganglion, comprising:

providing a pharmaceutically acceptable composition, comprising an active agent selected from the group consisting of

(A) peptide YY or peptide YY functional analogs, and

(B) antagonists of receptors for (A); and

administering the pharmaceutically acceptable composition to the mammal,

said active agent being delivered in an amount and under conditions such that the cholinergic intestino-fugal pathway, prevertebral ganglionic pathways, gangalion to central nervous system pathways, central nervous system pathways, adrenergic efferent neural pathway, the serotonergic interneuron and/or the opioid interneuron are activated by the action of (A), whereby the flow of blood to the gastrointestinal tract is increased, or such that activation of the cholinergic intestino-fugal pathway, prevertebral ganglionic pathways, gangalion to central nervous system pathways, the adrenergic efferent neural pathway, the serotonergic interneuron and/or the opioid interneuron is blocked by the action of (B), whereby the flow of blood to the gastrointestinal tract is decreased.

12. The method of Claim 11, wherein administering the pharmaceutically acceptable composition to the mammal further comprises administering the pharmaceutically acceptable composition by a delivery route selected from the group consisting of oral, intravenous, intraperitoneal, and nasal.